



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,945	01/16/2004	Michael L. Babala	1-25015	6176
46582 7590 09/05/2007 MACMILLAN, SOBANSKI & TODD, LLC ONE MARITIME PLAZA - FOURTH FLOOR 720 WATER STREET TOLEDO, OH 43604			EXAMINER ZANELLI, MICHAEL J	
			ART UNIT 3661	PAPER NUMBER
			MAIL DATE 09/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/758,945

Applicant(s)

BABALA ET AL.

Examiner

Michael J. Zanelli

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/9/04, 5/26/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. This application has been examined. The preliminary amendment filed 2/14/07 has been entered.
2. The amendment filed 2/14/07 is objected to under CFR 1.126 because the claims are not in consecutive order. Claim "48" has been renumbered as claim --47-- and will be referred to as such in this Office action.
3. The IDS filed 4/9/04 and 5/26/05 have been considered as indicated. The two European documents were not considered because translations/statements of relevancy were not provided. The Japanese document was not considered because a copy of the document was not provided, only an English language abstract.
4. Claims 11, 17, 27, 28, 38 and 40-47 are objected to because of the following informalities:
 - A. As per claim 11, at line 2 delete extraneous "said".
 - B. As per claim 27, at line 2 delete extraneous "said".
 - C. All claims depending from an objected base claim are also objected to as containing the same deficiencies.
5. Claims 1-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - A. As per claim 1, the claim appears to be inaccurate as amended. The claim as amended recites that the *vehicle system* is mounted within the housing whereas it is

believed applicant intended the claim to mean that the *electronic components* are mounted within the housing.

B. As per claim 7, at line 2 “said circuit substrate” lacks antecedence.

C. All claims depending from a rejected base claim are also rejected as containing the same deficiencies.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by WO 98/43470.

WO 98/43470 discloses a control unit for a vehicle system comprising a housing to be mounted in a vehicle, electronic components mounted within the housing and at least one motion sensor mounted within the housing and electrically connected to the electronic components for controlling a vehicle system whereby the motion sensor generates data relative to at least one reference axis of the vehicle (page 4, lines 7-13).

8. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Franke et al. (6,264,289).

A. As per claim 1, Franke discloses a control unit for a vehicle system (i.e., braking system) comprising a housing to be mounted in a vehicle in which electronic components and at least one motion sensor may be integrated together within the same housing (col.

Art Unit: 3661

3, lines 60-61; col. 4, lines 2-6, 48-52; col. 5, lines 19-25). The cited passages disclose that the travel electronics ("electronic components") may be integrated into a common housing with other braking control components (vehicle control unit) and that the motion sensors may be integrated into the travel electronics.

B. As per claims 2-4, as above whereby a plurality of motion sensors are provided within a common package and that the sensors may comprise at least one accelerometer and at least one angular rate sensor (col. 4, lines 1-11). The sensors generate motion data used by the vehicle control system.

C. As per claim 5, as above whereby signal conditioning circuits (i.e., filters, ADC, etc.) would have inherently been included in order to place the signals in a form which could be processed by the vehicle control system electronics.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3661

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/43470.

WO 98/43470 is applied as above whereby the document describes a control unit comprising at least one motion sensor mounted in the housing. Claim 2 differs in that a plurality of motion sensors are mounted within the housing. However, WO 98/43470 does discuss providing motion sensors for a plurality of vehicle reference axes based upon the vehicle system to be controlled (see page 12, line 23 to page 13, line 4). One of ordinary skill in the art of vehicle control systems would have found it obvious to apply the general teachings of WO 98/43470 to vehicle control systems requiring a plurality of motion sensors. Mounting more than one motion sensor in the same housing as the electronic components would have yielded the same advantages as disclosed for a single sensor (see page 4, lines 1-6).

11. Claims 6-24, 29-31, 35, 37, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franke et al. in view of Begin et al. (6,532,419), Flierl et al. (5,737,188) and Babutzka et al. (6,195,261).

A. As per claims 6 and 7, Franke discloses providing the motion sensor signals to braking system electronics for performing braking functions such as ABS and ASR (col. 3, lines 21-24). The systems by virtue of their complexity would have necessarily included microprocessor technology to process the various input signals and output the appropriate brake control commands. The motion sensors necessarily provide data relative to a reference frame and thus would have been mounted on the vehicle in such a manner as to provide the appropriate frame of reference relative to the vehicle. However, it was known in the vehicle control art at the time of applicant's invention that

mechanically fine tuning the mounting position of the sensor may still result in slight offsets. Such offsets were known to be corrected using processing techniques (see as exemplary Begin: col. 1, lines 24-34, 41-46). One of ordinary skill in the art would have found it obvious to apply these teachings to Franke because it would have provided more accurate motion sensor data, thus leading to better brake control.

B. As per claims 8-11, 16-19, 29-31, 35 and 40, Franke generally discloses integrating the various braking system electronics and motion sensors into a common housing mounted to a vehicle as appropriate in order to carry out braking functions (i.e., ABS, ASR, etc.). The claimed invention differs in that various configurations of the electronic circuits and sensors mounted within the housing are described. One of ordinary skill in the vehicle control system art would have been aware of prior art teachings which describe the packaging of electronic circuits and sensors into a common housing for mounting in a vehicle. For example, Babutzka discloses various configurations involving one or more substrates oriented to align motion sensors disposed thereon with vehicle reference axes (see Figs. 1a-b, 2; cols. 1-4). Babutzka further discloses that the housing may be adapted as appropriate to suit the needs of the application (col. 2, lines 2-3). The substrates (circuit boards) may use a variety of electrical conducting means to transmit signals between the electronic devices/sensors and/or substrates (col. 2, lines 42-64). Flierl represents another prior art teaching which addresses the problem of packaging electronics/sensors in a single housing for vehicle control system applications. As noted by Flierl at col. 2, lines 25-42, one of the advantages of packaging the vehicle control system electronics and motion sensors in a

Art Unit: 3661

single housing is the reduction in cabling, space requirements, cost, etc. One of ordinary skill in the art would have found it obvious to modify Franke to incorporate the prior art packaging techniques to realize these recognized advantages.

C. As per claim 12, as above whereby the number of control units encompassed within a single housing would have been application specific. The teachings of the above prior art would have been readily extrapolated to cover multiple control units.

D. As per claims 13-15, as above whereby the physical location of the mounted housing would have been dependent upon the vehicle design and/or the particular vehicle control system concerned.

E. As per claims 20-23, as above whereby the mounting of the control unit to a hydraulic valve body would have been an obvious design choice and such mounting was known in the art as acknowledged by applicant (see Fig. 1; [004]).

F. As per claim 24, as above whereby Franke discloses that the control unit is included in a hydraulic braking system but would have been equally applicable to an electric braking system.

G. As per claims 37-39, note comments above for claims 6 and 7.

12. Claims 25-28, 32-34, 36 and 41-47 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited documents are of general interest.

Art Unit: 3661

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Zanelli whose telephone number is (571) 272-6969.

The examiner can normally be reached on Monday-Thursday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J. Zanelli/
Primary Examiner
Art Unit 3661